

## CLAIMS

What is claimed is:

1. An ablative composition, comprising:  
an ablative material adapted to be applied to a surface;  
5        an intumescent material intermixed with at least a portion of the  
ablative material to form the ablative composition ; and  
      wherein the ablative composition forms a thermal protection layer for  
the surface.
- 10        2. The ablative composition of claim 1, wherein the intumescent  
material is intermixed with only a portion of the thickness of the ablative  
material.
3. The ablative composition of claim 1, wherein different quantities of  
15        said intumescent material are intermixed with said ablative material at  
different thickness layers of the ablative material.
4. The ablative composition of claim 3, wherein the intumescent  
material is intermixed in different quantities, and applied in successive layers  
20        to the surface, so that the ablative composition is formed by a series of layers  
with the layers each having a different concentration of said intumescent  
material mixed therein.
5. The ablative composition of claim 3, wherein the intumescent  
25        material is intermixed in different quantities, and applied in successive layers  
to the surface, so that the ablative composition is formed by a series of layers  
with an outermost layer having a maximum concentration of said intumescent  
material mixed therein.

6. The ablative composition of claim 1, wherein the intumescent material is between about 10 percent to 50 percent by weight of the ablative material.

5        7. The ablative composition of claim 1, wherein the intumescent material is between about 25 percent to about 30 percent by weight of the ablative material.

10       8. The ablative composition of claim 1, wherein the ablative composition has an overall thickness of between about 0.05 inch (1.27mm) and 0.75 inch (19.05mm).

15       9. The ablative composition of claim 8, wherein the ablative composition has an overall thickness of approximately 0.25 inches.

10       10. The ablative composition of claim 1, wherein the intumescent material comprises ammonium polyphosphate.

20       11. The ablative composition of claim 1, wherein the ablative material comprises a cork-based material.

12. The ablative composition of claim 1, wherein the ablative material comprises epoxy.

13. An ablative composition comprising:  
a first quantity of an ablative material adapted to be applied to a surface as a first ablative layer;

5 an intumescent material intermixed with a second quantity of said ablative material and applied as a second ablative layer on said first ablative layer; and

wherein said first and second layers cooperatively form said ablative composition.

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14. The ablative composition of claim 13, wherein the intumescent material comprises about 10 percent to about 50 percent of an overall weight of said ablative material.

15 15. The ablative composition of claim 13, wherein a plurality of layers comprising said intumescent material and said ablative material are formed to comprise the ablative composition.

20 16. The ablative composition of claim 15, wherein the plurality of layers comprising the intumescent material and the ablative material are further formed to include different concentrations of said intumescent material.

25 17. The ablative composition of claim 16, wherein the plurality of layers comprising said intumescent material and said ablative material are further formed such that an outermost layer has a maximum concentration of said intumescent material.

30 18. The ablative composition of claim 16, wherein the plurality of layers comprising said intumescent material and said ablative material are further formed such that each layer has a successively greater concentration

of said intumescent material, with an outermost layer has a maximum concentration of said intumescent material.

19. The ablative composition of claim 13, wherein the intumescent  
5 material comprises ammonium polyphosphate.

20. The ablative composition of claim 13, wherein the ablative material comprises a cork-based material.

10 21. The ablative composition of claim 13, wherein the ablative material comprises epoxy.

22. An ablative substance comprising:

a first portion of ablative material forming an ablative layer;

an intumescent material intermixed with a second portion of said  
5 ablative material to form a intumescent/ablative sub layer, the  
intumescent/ablative sub layer comprising at least about 10 percent by weight  
of a total weight of said first and second portions of ablative material; and  
wherein the intumescent/ablative sub layer is applied directly to said  
ablative layer.

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23. The ablative substance of claim 22, wherein the intumescent  
material comprises ammonium polyphosphate.

24. The ablative substance of claim 22, wherein the ablative material  
15 comprises a cork-based material.

25. The ablative substance of claim 22, wherein the ablative material  
comprises epoxy.

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